



SURGICAL MANAGEMENT OF INCIDENTALLY FOUND IMPACTED MAXILLARY CANINE- A CASE REPORT

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INTRODUCTION

The maxillary permanent canine is a tooth that is generally considered to be an important tooth in the dental arch by virtue of its place in the scheme of functional occlusion, its contribution to the appearance of the patient, its size and root length, and its role in establishing arch form. Impacted maxillary canines are quite common, and approximately 12%–15% of the population present with impacted canines.

The incidence of canine impaction in the maxilla is more than twice that in the mandible. Of all patients who have impacted maxillary canines, 8% have bilateral impaction. Approximately one-third of impacted maxillary canines are located labially and two-thirds are located palatally. Canine impaction can be caused by various factors. The results of Jacoby's study showed that 85% of palatally impacted canines had sufficient space for eruption, whereas only 17% of labially impacted canines had sufficient space.



Fig 1 Surgical removal of impacted maxillary canine; A- Crevicular incision made buccally; B- Mucoperiosteal flap raised; C- Drilling of bone to expose the tooth; D- Tooth delivered palatally; E- PRF used for the defect; F- Closure done with 3.0 silk

Therefore, arch length discrepancy is thought to be a primary etiologic factor for labially impacted canines.¹ Impacted canine may result into labial or lingual malpositioning of the teeth, migration of the adjacent teeth, root resorption, cyst formation, infection with partially erupted tooth, referred pain or combinations of the above sequelae. In this article we report a case where a palatally impacted canine in maxillary arch was removed surgically without any post-operative complications.

Case Report

14 year male reported to the Department of Orthodontics with a chief complaint of crowding in upper anterior teeth. The patient was advised orthodontic treatment for correction of the crowding in the maxillary arch. Routine radiographic examination such as Orthopantomogram (OPG) and Lateral cephalogram was advised. Opg showed presence of impacted maxillary canine on the right side. Occlusal view was advised to determine the exact location of the tooth, which showed palatally placed horizontally impacted canine. Patient was prepared for the surgery and informed written consent was taken from the patient's guardian. Painting draping was done in usual manner. Bilateral infraorbital and nasopalatine nerve block was given. A crevicular incision was made palatally (Fig.1A) and a mucoperiosteal flap was reflected (Fig.1B).

Bone drilling was performed under copious cold saline irrigation and the tooth was exposed (Fig.1C). The tooth was delivered palatally (Fig.1D). Platelet Rich fibrin (PRF) (Fig.1E) was placed into the socket to promote bone healing and closure was done with 3.0 silk (Fig.1F). Patient was prescribed antibiotics and analgesics for 5 days to prevent surgical site infection and post-operative pain & discomfort. Suture removal was done after 7 days after uneventful post-operative recovery.

DISCUSSION

Patients with impacted canines usually endure long treatment times, and successful orthodontic treatment and final treatment outcome of impacted canines are unpredictable.² It has been found that treating a malocclusion with an impacted canine takes longer than treating a similar malocclusion without an impaction.³ This could be due to the application of different treatment methods in young patients according to the concept of "watch and wait. The cause of impacted canine is still a debatable question with many answers such as over retained primary teeth, ectopic position of the tooth bud, narrow arch size, ankyloses of the permanent tooth, and genetics. Impacted canines can be positioned labially or palatally.

The incidence of palatal impaction is greater than labial impaction by a ratio of 2:1-3:1.⁴

However, Wertz⁵ suggested that if the canine tip is beyond the adjacent lateral incisor, it might be difficult to orthodontically erupt it into a normal position. Impacted canines possess various difficulties such as crowding, infection, damage to adjacent teeth and cyst formation all of which warrants its removal. We decided to go for surgical removal of the impacted canine with prior consult with an Orthodontist when it was evaluated and confirmed that the tooth cannot be brought into occlusion normally.

CONCLUSION

Surgical removal of impacted canine is a challenging task for any maxillofacial surgeon. A proper diagnosis regarding the exact location of the impacted canine is very essential before the surgical removal is attempted. A prior orthodontic consultation is also essential to evaluate whether the impacted canine can be brought into normal occlusion orthodontically. In today's era, when technology has grown leaps and bounds, we would advice the use of Cone Beam Computed Tomography (CBCT) for planning and management of such cases. The use of PRF in the post-operative defect to promote bone healing and bone formation in that area is also a good option and should be considered when ever possible.

References

1. Impacted canines: Etiology, diagnosis, and orthodontic management Ranjit Manne, Chandra Sekhar Gandikota, Shubhaker Rao Juvvadi, Haranath Reddy Medapati Rama, Sampath Anche.
2. Fleming PS, Scott P, Heidari N, Dibiase AT. Influence of radiographic position of ectopic canines on the duration of orthodontic treatment. *Angle Orthod* 2009; 79:442-6.
3. Smith B, Stewart K, Liu S, Eckert G, Kula K. Prediction of orthodontic treatment of surgically exposed unilateral maxillary impacted canine patients. *Angle Orthod* 2012; 82:723-31.
4. Fournier A, Turcotte JY, Bernard C. Orthodontic considerations in the treatment of maxillary impacted canines. *Am J Orthod* 1982; 81:236e9.
5. Wertz RA. Treatment of transmigrated mandibular canines. *Am J Orthod Dentofacial Orthop* 1994; 106:419-27.

